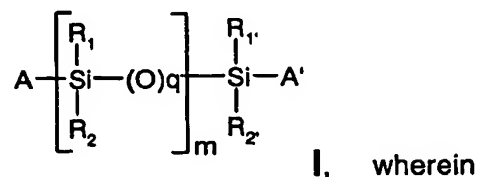


Claims

1. A process for preparing organosilicon group containing photoinitiators of the formula I



**m** is a number from 1 to 200;

**q** is 0 or 1;

**A** is  $\text{IN}-\text{C}(\text{O})-\text{O}-\text{CHR}_3-\text{Y}-$  or  $\text{IN}-\text{C}(\text{O})-\text{NH}-\text{CHR}_3-\text{Y}-$ ;

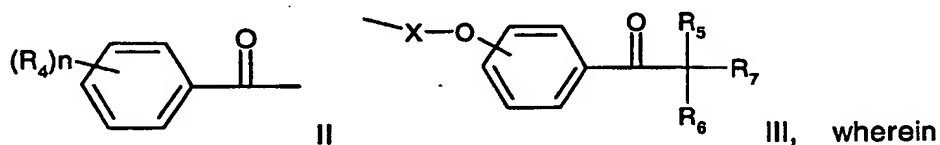
**A'** is A or  $\text{R}_1'$ ;

**R<sub>1</sub>** and **R<sub>1</sub>'**, **R<sub>2</sub>** and **R<sub>2</sub>'** independently of one another are  $\text{C}_1$ - $\text{C}_{18}$ alkyl or phenyl, or  $-(\text{O})_q-\text{SiR}_1\text{R}_1'\text{R}_2$ ;

**R<sub>3</sub>** is hydrogen or  $\text{C}_1$ - $\text{C}_6$ alkyl,

**Y** is a divalent group selected from  $\text{C}_1$ - $\text{C}_{10}$ alkylene,  $\text{C}_2$ - $\text{C}_{10}$ alkenylene or  $-(\text{CH}_2)_b-\text{O}-(\text{CH}_2)_a-$ ; **a** and **b** are each independently of the other a number of 1 to 6;

**IN** is a photolabile functional moiety of the formula II or III



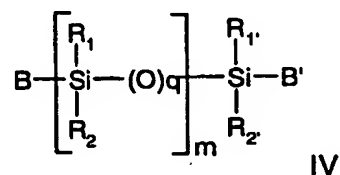
**R<sub>4</sub>** is hydrogen or  $-\text{C}(\text{O})-\text{C}(\text{O})-\text{OH}$  or  $-\text{C}(\text{O})-\text{C}(\text{O})-\text{OC}_1-\text{C}_6\text{alkyl}$  and **n** is 1-3;

**R<sub>5</sub>** and **R<sub>6</sub>** are  $\text{C}_1$ - $\text{C}_{12}$ alkyl or together are cyclo $\text{C}_5$ - $\text{C}_7$ alkyl;

**R<sub>7</sub>** is hydroxy,  $\text{C}_1$ - $\text{C}_6$ alkoxy or morpholinyl;

**X** is  $-(\text{CH}_2)_a-$ ,  $-(\text{CH}_2)_b-\text{O}-(\text{CH}_2)_a-$  or  $-(\text{CH}_2)_b-\text{O}-\text{CO}-(\text{CH}_2)_a-$ ; **a** and **b** are each independently of the other a number of 1 to 6;

whereby the process is characterized in that a photolabile functional moiety containing a carboxy group ( $\text{IN}-\text{COOH}$ ) or an alkoxy carbonyl group ( $\text{IN}-\text{CO}-\text{OC}_1-\text{C}_6\text{alkyl}$ ) is reacted with a carbinol- or amino terminated organosilicon compound of the formula IV



wherein **m**, **R<sub>1</sub>** and **R<sub>1</sub>'**, **R<sub>2</sub>** and **R<sub>2</sub>'** are as defined above and

- 23 -

**B** is  $-Y-CH_2R_3-OH$  or  $-Y-CH_2R_3-NH_2$ ;

**B'** is **B** or  $R_1'$ ,

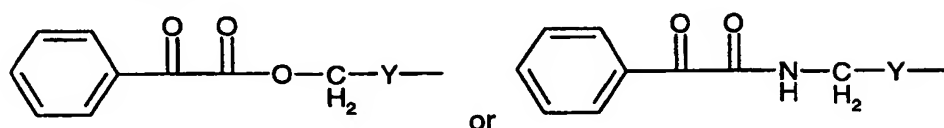
in the presence of an enzyme which catalyzes the esterification, transesterification or amidation reaction.

2. A process according to claim 1, wherein

**m** is a number from 1 to 20;

**q** is 0 or 1;

**A** is a group



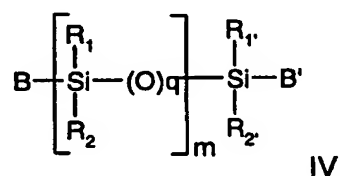
**A'** is **A** or  $R_1'$ ;

**R<sub>1</sub>** and  $R_1'$ , **R<sub>2</sub>** and  $R_2'$  independently of one another are methyl,  $-O-Si(CH_3)_3$  or  $-Si(CH_3)_3$ ;

**Y** is a divalent group selected from  $C_1-C_{10}$ alkylene,  $C_2-C_{10}$ alkenylene or

$-(CH_2)_b-O-(CH_2)_a-$ ; **a** and **b** are each independently of the other a number of 1 to 6;

whereby the process is characterized in that a photolabile functional moiety containing a carboxy group ( $IN-COOH$ ) or an alkoxycarbonyl group ( $IN-CO-OC_1-C_6$ alkyl) is reacted with a carbinol- or amino terminated organosilicon compound of the formula IV



wherein **m**,  $R_1$  and  $R_1'$ ,  $R_2$  and  $R_2'$  are as defined above and

**B** is  $-Y-CH_2-OH$  or  $-Y-CH_2-NH_2$ ;

**B'** is **B** or  $R_1'$ ,

in the presence of an enzyme selected from esterases, lipases or proteases.

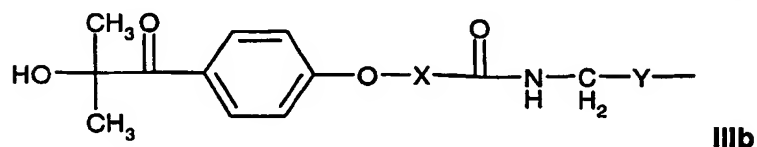
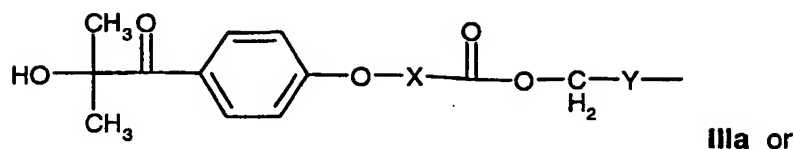
3. A process according to claim 1, wherein

**m** is a number from 1 to 20;

**q** is 0 or 1;

**A** is a group of the formula IIIa or IIIb

- 24 -



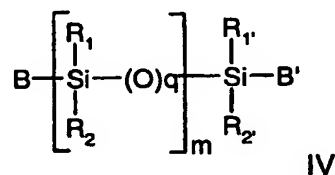
**A'** is A or R<sub>1</sub>';

**R<sub>1</sub>** and **R<sub>1</sub>'**, **R<sub>2</sub>** and **R<sub>2</sub>'** independently of one another are methyl, -O-Si(CH<sub>3</sub>)<sub>3</sub> or -Si(CH<sub>3</sub>)<sub>3</sub>;

**Y** is a divalent group selected from C<sub>1</sub>-C<sub>10</sub>alkylene, C<sub>2</sub>-C<sub>10</sub>alkenylene or -(CH<sub>2</sub>)<sub>b</sub>-O-(CH<sub>2</sub>)<sub>a</sub>-; **a** and **b** are each independently of the other a number of 1 to 6;

**X** is -(CH<sub>2</sub>)<sub>a</sub>-, -(CH<sub>2</sub>)<sub>b</sub>-O-(CH<sub>2</sub>)<sub>a</sub>- or -(CH<sub>2</sub>)<sub>b</sub>-O-CO-(CH<sub>2</sub>)<sub>a</sub>-; **a** and **b** are each independently of the other a number of 1 to 6;

whereby the process is characterized in that a photolabile functional moiety containing a carboxy group (IN-COOH) or an alkoxycarbonyl group (IN-CO-OC<sub>1</sub>-C<sub>6</sub>alkyl) is reacted with a carbinol- or amino terminated organosilicon compound of the formula IV



wherein m, R<sub>1</sub> and R<sub>1</sub>', R<sub>2</sub> and R<sub>2</sub>' are as defined above and

**B** is -Y-CH<sub>2</sub>-OH or -Y-CH<sub>2</sub>-NH<sub>2</sub>;

**B'** is B or R<sub>1</sub>';

in the presence of an enzyme selected from esterases, lipases or proteases.

4. A process according to any one of claims 1 to 3, wherein the enzyme is immobilized on a support.

5. A process according to any one of claims 1 to 4, wherein the reaction is carried out at a temperature in the range from 25°C to 75°C.